Introduction A significant proportion of lung cancer patients present as an emergency. This is associated with poor one year survival. Many of these patients have had contact with health services before presenting as an emergency. It is estimated that one in five lung cancer patients have an unplanned admission before their urgent clinic appointment.[1]

Objective To reduce the number of emergency lung cancer admissions by providing an effective alternative ambulatory pathway for high risk patients.

Methods Patients referred on the two week wait pathway are vetted by the respiratory physicians. Those identified as having a high risk of admission are prioritised and reviewed urgently on the ambulatory care unit usually by the next working day. Patients with the following features were expedited:

1. Superior vena caval obstruction
2. Liver function abnormalities
3. Large tumour burden on chest radiograph
4. Severe symptoms such as pain and breathlessness
5. Large pleural effusion.

Abstract P78 Table 1

	Year	Incidence of lung cancer	Total no. of admissions (% of lung cancer incidence)	Length of stay	Total bed-days
Kettering General Hospital	2012–13	195	108 (55%)	11.6	1253
	2014–15	195	67 (34%)	8.1	543
England & Wales	2012–13	33,231	18,878 (56%)	8.9	168,014
	2014–15	30,765	17,281 (56%)	8.9	153,800

Patients with suspected lung cancer presenting to the emergency department were also re-directed to the ambulatory care unit whenever feasible. We evaluated the service for a period of 12 months from October 2014 and compared it with the 12 month period prior to the commissioning of the ambulatory care unit in June 2013. As part of the service, the team developed an innovative lung cancer diagnostic service utilising ultrasound guidance to facilitate early diagnosis.

Results Table 1 demonstrates the resulting drop in unplanned lung cancer admissions and length of stay. We estimate a cost saving of £170,000 based on a 710 bed-day reduction (£300/bed day) after taking into consideration physician time. If rolled out nationally, reducing the admission rate to 34% of the lung cancer incidence will avoid 6800 admissions (>55,000 bed-days) with significant cost savings and benefits to patients.

Conclusion Flexible pathways are cost effective and prevent emergency admission of lung cancer patients which is associated with high mortality. This novel approach is easily adoptable widely and would have a significant impact across NHS.

REFERENCE

1 Tackling emergency presentation of lung cancer: an expert working group report and recommendations. *British Lung Foundation*, 2015.

P79 SINGLE POINT OF ACCESS CLINIC (SPOAC): A NEW REGIONAL LUNG CANCER PATHWAY IN NEW ZEALAND

[1]P Dawkins, [2]J McWilliams, [3]R Sullivan. *[1]Middlemore Hospital, Auckland, New Zealand; [2]Northern Regional Alliance, Auckland, New Zealand; [3]Auckland City Hospital, Auckland, New Zealand*

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Aim A new pathway to enable quicker lung cancer diagnosis for the 4 district health boards within one of the cancer networks in New Zealand was developed incorporating rapid access clinics (RACs), with upfront PET-CT scans for those considered potentially curable at initial assessment.

Methods In this 12-week pilot, patients graded as high suspicion of lung cancer were seen in RACs with spirometry, performance status assessment and available radiology (chest X-ray or CT scan). Those considered potentially curable by surgery or radiotherapy (FEV1 $\geq$1 litre, ECOG score <2, no evidence of mediastinal lymphadenopathy or metastasis on imaging, no comorbidities precluding radical treatment) received an upfront PET-CT scan; those who were not received a standard CT scan if not already done. These protocols were based on the virtual model proposed by the Gleeson group, Oxford, UK.[1] Time through the pathway was measured and compared with historical data from the regional lung cancer database in a 6 month period the year before the pilot.

Results One hundred and sixty five patients completed the pathway, of which 105 were found to have lung cancer. Forty one patients had upfront PET-CT scans; 30 were confirmed as lung cancer, 7 of which subsequently had palliative treatment. Eleven had non-lung cancer diagnoses (9 not cancer or nodule follow up; 1 metastasis; 1 other cancer). Seventeen patients had PET-CT scans later in the pathway, 4 of which subsequently had curative treatment. Median time from referral to first treatment was reduced by 16.7 days (patients with curative treatment intent 17.2 days and palliative treatment intent 12.7 days), significantly reducing both the time from referral to multidisciplinary meeting (MDM) and MDM to first treatment. Achievement of 62-day target referral to treatment targets was 85.7% compared with 56.6% in the historical data.

Conclusion A regional lung cancer pathway incorporating RACs and upfront PET-CT scans for curative track patients resulted in improvements in diagnostic delays and 62-day treatment targets. These findings subsequently led to implementation of this pathway regionally.

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REFERENCE

1 Macpherson R, *et al*. A proposed new imaging pathway for patients with suspected lung cancer. *Clin Radiol* 2012;**67**(6):564–73.

P80 SYMPTOMS, DELAY TO PRESENTATION AND SURVIVAL IN LUNG CANCER

[1]WY Chan, [2]A Clark, [3]U Dernedde, [1]T Roques, [3]M Burton, [1]J Kotecha, [2]A Wilson, [1]C Martin. *[1]Norfolk and Norwich University Hospital, Norwich, UK; [2]University of East Anglia, Norwich, UK; [3]James Paget University Hospital, Norwich, UK*

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Introduction and objectives We aimed to study quantitatively the lung cancer pathway from first symptom to treatment and to explore relationship between symptoms, delay and survival.
Methods Newly diagnosed lung cancer patients, referred to Oncology clinics in Norfolk 2008–2012, completed systematic questionnaires regarding date of onset of each symptom, MRC dyspnoea score and% weight loss. GPs also completed questionnaires. Additional patient, pathway and tumour data were retrieved from hospital records.

The cancer pathway was recorded in five phases: 1) first symptom to GP presentation, 2) to secondary care (SC) referral, 3) to SC appointment, 4) to MDT meeting or date of diagnosis and 5) to treatment commencing.
Results Of 379 patients, mean age was 70.1 years, staging was: I-II (13.7%), III (34.3%) and IV (52%). Cohort survival was 6.1% with minimum follow-up of 39 months.

Mean phase lengths were 221.8, 45.8, 10.7, 21.3, 34.7 days for phases 1–5 respectively. Phase 1 was significantly longer ($p < 0.01$). Mean phase 1 was shorter in stage III-IV than I-II, 200 and 245 days respectively ($p < 0.05$), in ex-/never-smokers (191.6 days) than smokers (264.2 days) ($p = 0.022$) and if first symptom was haemoptysis compared to cough or dyspnoea. 36.9% patients felt they delayed seeing their GP. Commonest reasons were: thinking symptoms were insignificant (35%), anxiety (28.6%) and denial (20%). Good correlation was seen between patient and GP reported dates.

Reported symptoms included (% initial symptoms in parenthesis): cough 71% (62.8%), dyspnoea 62.8% (27.2%, chest pain 37.7% (8.7%), haemoptysis 28% (4.2%).

Symptoms conferring increased hazard of death were defined as B symptoms. These were: grade 4/5 dyspnoea, hoarseness or loss of voice, metastatic pain and systemic symptoms (HRs 1.77, 1.53, 2.21, 1.93 respectively, $p < 0.001$). Patients with initial cough/mild dyspnoea have means of 127/210 days before B symptoms develop.

Overall no relation was found between phase lengths 1–4 and survival. Survival increased if phase 5 was >31 compared to ≤31 days (HR 0.74, $p = 0.006$).
Conclusions Phase 1 is longest. There is no relation between phase length and survival except in phase 5. Symptoms are more important to survival than delay. Effective therapy started within 3 months (before B symptoms) could increase survival.

P81 STRAIGHT TO CT DELIVERS EARLIER FIRST DEFINITIVE TREATMENT IN LUNG CANCER– EFFECT OF A SIMPLE INTERVENTION

P Malhotra, P Murphy, C Dawson, N Hunt, J Hendry. *St Helens and Knowsley Teaching Hospitals NHS Trust, Prescot, UK*

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Background The National Optimal Lung Cancer Pathway (NOLCP) recommends performing a CT scan before a patients first appointment in a rapid access suspected lung cancer clinic. A local audit in 2014 at our hospital which receives over 350 two week rule suspected lung cancer referrals per year found that less than 50% of patients had a CT scan before their first appointment.
Objective To determine the effect of a simple cue for physicians stamped on 2 week rule referral forms on the proportion of patients who have a CT scan before their first appointment in a rapid access suspected lung cancer clinic, and its effect on the time to definitive treatment.
Methods This was a retrospective analysis of the lung cancer clinic database at a large district general hospital. Two periods were audited: September – November 2014 (pre-intervention), and July – September 2015 (post-intervention). Data on demographic characteristics, date of first clinic, date of performance of CT scan, and time to definitive treatment was collected. From January 2016 onwards, a simple new intervention was put in place: all 2 week rule referrals were stamped with a cue ("Pre-clinic CT: Yes or No?") for Consultants triaging the referral to prompt them to arrange a pre-clinic CT scan if appropriate. Re-audit was carried out during the period July–September 2015.
Results Seventy-six out of 81 two week rule referrals between September–November 2014 had a CT scan during their management pathway. Thirty-six (47%) of these scans were performed before the patients first appointment in clinic. Re-audit between July-September 2015 after introduction of the stamp revealed that 88 CT scans were performed on 101 two week referrals. Of these, 70 (80%) patients had a CT scan before their first appointment.

Time to first definitive treatment improved by 1 week from 38.7 days in the pre-intervention cohort, to 31.5 days in the post-intervention cohort.
Conclusion A simple cue stamped on 2 week rule referral forms increased the proportion of patients who had a CT scan before their first appointment in a rapid access suspected lung cancer clinic from 47% to 80%, and reduced the time to definitive treatment by 1 week.

P82 OUTCOMES FOR PATIENTS WITH NEGATIVE SCANS ON THE 'STRAIGHT TO CT' PATHWAY

H Gundersen, A Hufton, R Trafford, MJ Walshaw, M Ledson. *Liverpool Heart and Chest Hospital NHS Foundation Trust, Liverpool, UK*

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Introduction Liverpool has a 'straight to CT' service for patients with coded radiology suspicious of lung cancer and for clinicians worried symptoms may indicate malignancy. In our pathway the lung cancer team automatically take patients whose CT suggests lung cancer. For patients whose scan does not suggest cancer the result is forwarded to their GP to act upon as necessary. We have investigated the outcomes for this patient group for the calendar year 2015.
Method 387 CT scans were carried out on the 72 hour 'straight to CT' pathway. The cancer services took 179 patients. We have reviewed local radiology, result datasets and hospital records for the remaining 208 patients whose CT results were managed by their GP.
Results Within the group without suggestions of cancer on CT, indications for 72 hour CT were: 90 patients (43%) had coded radiology and 118 'worried clinician' (57%) (23% haemoptysis; 34% other symptoms). The results of the CT scans showed 42 (20%) nodules requiring follow up, 49 (23.5%) inflammatory changes, 49 (23.5%) nil significant, 20 (10%) emphysema, 11 (5%) bronchiectasis and 37 (18%) combinations of other (fibrosis, PE, atelectasis etc). For follow up 17 (8%) were already under the care of a chest physician, 74 (36%) were referred to a chest physician and 117 (56%) were managed in primary care. 73 patients (35.1%) had repeat CT scans. In total 99 scans have been done, 31.3% of these were ordered by primary care 68.7% by